## REMARKS

Claims 1-33 are pending. By virtue of this amendment, claims 1, 18 and 19 have been amended and new claim 33 added. Reconsideration is respectfully requested.

Applicants' undersigned representative wishes to thank Examiners Krass and Ostrup for their time and helpful suggestions in the telephone interview held on July 11, 2002, during which the pending claims and prior art were discussed.

Amendment and/or cancellation of certain claims is not to be construed as a dedication to the public of any of the subject matter of the claims as previously presented, and Applicants reserve the right to prosecute the subject matter of such claims in continuation and/or divisional applications.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "**Version with markings to show changes made**".

***Rejection under 35 U.S.C. §103(a) over Davis in view of Woodford, et al.***

Claims 1-10, 12-14, 16-25, 27-29 and 31-32 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Davis (US 5,143,717) and further in view of Woodford, et al., "Bioavailability and Activity of Topical Corticosteroids from a Novel Drug Delivery System, the Aerosol Quick-Break Foam," *J. Pharmaceutical Sciences*, Vol. 66, No. 1, January 1977. Independent claims 1, 18 and 19 have been amended to overcome the rejection, as further discussed herein.

*The claimed invention*

Claims 1 and 19 are directed to pharmaceutical aerosol foam compositions, the compositions comprising, inter alia, a pharmaceutically active ingredient and an occlusive agent, Claim 1 requires the occlusive agent be present "in an amount sufficient to form an occlusive

layer on the skin" whereas claim 19 recites the specific occlusive agent petrolatum in a specified amount that likewise achieves the same result. In addition, as clarified by the amendments to claims 1 and 19, the active ingredient in the claimed formulations is "solubilized in the composition" yet is "insoluble in both water and the occlusive agent." Claim 18 as amended is directed to a pharmaceutical aerosol dispenser comprising a pharmaceutical aerosol foam composition having characteristics similar to those recited in amended claim 1.

*The prior art*

Davis discloses an antibiotic formulation useful in the treatment of burns and abrasions and adapted for topical application as a foam. Specifically, the Davis formulation is "an antibiotic [silver sulfadiazine] suspended in an oil-in-water emulsion that includes specific quantities of white petrolatum, a fatty alcohol, an emollient, an emulsifying agent, a humectant, a preservative and water." (Column 1, lines 63-68; see also e.g., column 2, lines 18-27.) Thus, the active ingredient in Davis, specifically silver sulfadiazine, is suspended in the formulation. This is further reinforced by the extensive discussion in Davis regarding the micelle-like bubble architecture of the Davis foam. (See column 2, line 62 et seq.) Another important feature of the Davis foam is that it remains stable over long periods of time, i.e., "at least 24 hours after being applied." (column 4, lines 18-24.)

Woodford, et al. discloses a quick-break aerosol foam containing corticosteroids, including the corticosteroids betamethasone valerate and clobetasol propionate. (page 100, second column, second paragraph.)

*The prior art combination distinguished*

In making the rejection, the Examiner asserts that:

> It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the topical antibacterial foam of Davis, by adding corticosteroids as taught by Woodford, et al., because of the expectation of

obtaining a quick-break aerosolized foam composition which could be used to deliver skin treatment compositions in a safe, economic way.

(Office Action, page 3.) Without reaching whether or not such expectation exists, Applicants note that the recited combination, i.e., the foam of Davis modified by adding the corticosteroid of Woodford, et al., does not yield the claimed formulations of amended claims 1, 18 and 19.

As noted above, Davis teaches a suspended active, not a solubilized active, as is claimed. There is no teaching in Davis that it would desirable, or even possible, to solubilize the particular active ingredient. Further, the addition of the Woodford, et al. corticosteroid would not change the essence of the Davis foam, i.e., an emulsion of a suspended active. One skilled in the art would readily appreciate that formulations of solublized actives have a variety of potential advantages over suspended actives, including the likelihood of increased stability, faster penetration, better distribution of active throughout the formulation, better compatibility with solvent systems and surfactants, and better cosmetic feel. Suspended actives suffer from comparative disadvantages, including likelihood of a potential to aggregate or "settle out" of the formulation, slower penetration, a need to add suspending agents, incompatibility with certain solvent systems and surfactants, and a potential gritty sensation when applied.

As the combination of Davis and Woodford, et al., does not teach each and every element of amended claims 1, 18 and 19, the claims cannot be rendered unpatentable under 35 U.S.C. §103(a) by the combination.

Applicants also note that Woodford et al. itself in no way suggests the claimed invention. Claims 1, 18 and 19, as mentioned, all require a formulation containing a specified amount occlusive agent. Claims 1 and 18 require the occlusive agent be present in an amount sufficient to form an occlusive layer on the skin in use. Claim 19 requires the specific occlusive agent, petrolatum, in a specified amount that achieves such effect. As set forth in the specification, an aspect of subject invention is the provision of an aerosol foam or mousse composition that

includes a relatively low amount of occlusive agent, yet still is able to enhance topical delivery of a pharmaceutical. When applied, the occlusive agent forms an occlusive layer on the skin, resulting in a reduction in transepidermal water loss and increased skin hydration, which, in theory, increases skin permeability to effect enhanced skin penetration of a pharmaceutical. (See, e.g., pages 2-3 and 6-12.)

Woodford, et al., however, does not suggest the provision of an aerosol foam having any such manner of occlusive agent. Rather, it is clear from Woodford, et al., that the described formulations of Woodford do not have any occlusive properties that would suggest the claimed formulations, nor is there anything in Woodford, et al. to suggest such occlusive properties in a foam would be achievable. In fact, Woodford, et al. resorts to external means to provide for occlusion. Specifically, with reference to assessing the efficacy and bioavailability of test formulations applied to the forearms of volunteers, Woodford, et al., explicitly describe occluding the application test sites by using polyester film. (page 100, first column, last paragraph.) That Woodford, et al., must resort to an external device, i.e., polyester film, to provide for occlusion is indicative that the disclosed formulations themselves do not achieve such an effect. Therefore, the fact that Woodford, et al., disclose certain components, e.g., a non-ionic emulsifying wax (at 2% by weight) used as a foaming agent (see paragraph spanning pages 99-100 and page 103 , first full paragraph), does not equate to a teaching or suggestion of the claimed compositions having the effective amounts of the claimed occlusive agent.

For the foregoing reasons then, Applicants submit that claims 1, 18, and 19 are patentable under 35 U.S.C. §103(a) over the cited references, as are claims 2-10, 12-14, 16-17, 20-25, 27-29 and 31-32 depending therefrom. Applicants therefore respectfully request withdrawal of the rejection.

***Rejection under 35 U.S.C. §103(a) over Davis, in view of Woodford, et al., and further in view of Jones***

Claims 1-14, 16-29 and 31-32 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Davis and Woodford, et al., as applied above to claims 1-10, 12-14, 16-25, 27-29 and 31-32 and further in view of Jones, et al. (WO 96/27376). The amendments to claims 1, 18 and 19 overcome the rejection.

In making the rejection, the Examiner has noted that the combination of Davis and Woodford, et al. previously discussed lacks the specific claimed emulsifier recited in dependent claims 11 and 26. Jones et al. teach a corticosteroid containing quick break foam, and is relied upon specifically for teaching the emulsifier polysorbate 60. This is the particular emulsifier recited in dependent claims 11 and 26.

The deficiencies of combining Davis and Woodford, et al. with respect to claims 1, 18 and 19, and claims depending therefrom, have been discussed in detail above. The inclusion of the specific emulsifier polysorbate 60 taught by Jones in no way cures these deficiencies.

Applicants therefore submit that claims 1, 18, and 19 are patentable under 35 U.S.C. §103(a) over the cited references, as are claims 2-10, 12-14, 16-17, 20-25, 27-29 and 31-32 depending therefrom, and respectfully request withdrawal of the rejection.

***Rejection under 35 U.S.C. §103(a) over Davis in view of Woodford, et al., and further in view of Gers-Barlag***

Claims 1-10, 12-25 and 27-32 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Davis and Woodford, et al., as applied above to claims 1-10, 12-14, 16-25, 27-29 and 31-32 and further in view of Gers-Barlag, et al. (US 5,833,960). The amendments to claims 1, 18 and 19 overcome the rejection.

Gers-Barlag et al. is directed to light protection preparations, and would appear to be more particularly directed to so-called "after-foaming" preparations, which foam after application to the skin, typically under the influence of an after-foaming agent. (See, e.g.,

10; column 4, lines 34-56; column 8, line 64 through column 9, line 2.) This reference is relied upon by the Examiner for providing particular amounts of aqueous solvent or propellant, as recited in dependent claims 13 and 17, respectively, and also for providing the particular solvent recited in dependent claims 15 and 30.

Again, the deficiencies of combining Davis and Woodford, et al. with respect to claims 1, 18 and 19, and claims depending therefrom, have been discussed in detail above. The provision of particular amounts of aqueous solvent or propellant, or particular solvents, as taught by Gers-Barlag, likewise does not cure these deficiencies.

Applicants therefore submit that claims 1, 18, and 19 are patentable under 35 U.S.C. §103(a) over the cited references, as are claims 1-10, 12-17, 20-25 and 27-32 depending therefrom, and respectfully request withdrawal of the rejection.

***New claim 33***

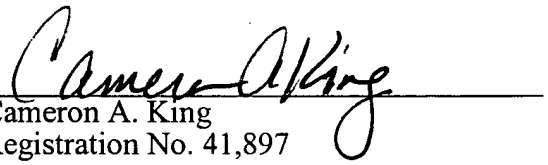
New claim 33 is directed to a pharmaceutical aerosol foam comprising, inter alia, the occlusive agent petrolatum in the specified amount and the active agent clobetasol propionate solubilized in the composition. Claim 33 is patentable over Davis in combination with the other cited secondary references for reasons similar to those discussed above. Namely, the claimed foam contains a solubilized, as opposed to suspended, active.

## CONCLUSION

Applicant has, by way of the amendments and remarks presented herein, made a sincere effort to overcome rejections and address all issues that were raised in the outstanding Office Action. Accordingly, reconsideration and allowance of the pending claims are respectfully requested. If it is determined that a telephone conversation would further expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Assistant Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket no. 468452000300.

Respectfully submitted,

Dated: August 16, 2002 By: 

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## VERSION WITH MARKINGS TO SHOW CHANGES MADE

**In the Claims:**

1. (Twice Amended) A pharmaceutical aerosol foam composition comprising:

an effective amount of a pharmaceutically active ingredient

an occlusive agent;

an aqueous solvent; and

an organic cosolvent

the pharmaceutically active ingredient being solubilized in the composition but insoluble in both water and the occlusive agent;

the occlusive agent being present in an amount sufficient to form an occlusive layer on the skin, in use.

18. (Twice Amended) A pharmaceutical aerosol dispenser comprising:

a pharmaceutical aerosol foam composition including

an effective amount of a pharmaceutically active ingredient

an occlusive agent;

an aqueous solvent;

an organic cosolvent.

the pharmaceutically active ingredient being solubilized in the composition but insoluble in both water and the occlusive agent;

the occlusive agent being present in an amount sufficient to form an occlusive layer on the skin, in use.

19. (Amended) A pharmaceutical aerosol foam composition comprising:

an effective amount of a pharmaceutically active ingredient;

petrolatum in an amount of approximately 55% by weight or less, based on the total weight of the composition;

an aqueous solvent; and

an organic cosolvent,

the pharmaceutically active ingredient being solubilized in the composition but insoluble in both water and petrolatum.